Firearm Safe Storage in Rural Families: Community Perspectives About Ownership and Safety Messaging

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Firearm-related injuries are the leading cause of death among youth in the United States, and rates of firearm-related suicide in rural youth are more than double those in urban youth. Although safe firearm storage has been shown to reduce firearm injuries, little is known about how to culturally tailor such interventions for rural families in the United States. Informed by community-based participatory methods, focus groups and key informant interviews were conducted to design a safe storage prevention strategy for rural families. Participants included a broad array of community stakeholders (n = 40; 60% male, 40% female; age 15–72, M = 36.9, SD = 18.9) who were asked to identify acceptable messengers, message content, and delivery mechanisms that were perceived as respectful to the strengths of rural culture. Independent coders analyzed qualitative data using an open coding technique. Emerging themes included (1) community norms, values, and beliefs about firearms; (2) reasons for ownership; (3) firearm safety; (4) storage practices; (5) barriers to safe storage; and (6) suggested intervention components. Firearms were described as a "way of life" and family tradition in rural areas. Owning firearms for hunting and protection influenced family storage decisions. Intervention strategies that use respected firearm experts as messengers, refer to locally derived data, and that reflect community pride in firearm safety and responsible ownership may improve the acceptability of prevention messages in rural areas.

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Firearm-related injuries are now the leading cause of death among youth in the United States, making pediatric firearm injury prevention a national priority (Goldstick et al., 2022). Suicide rates and firearm-related suicide rates are higher in rural relative to urban areas (Centers for Disease Control and Prevention [CDC], 2019). Among rural youth, rates of firearm-related suicide were more than double those of urban youth (CDC, 2019). About half of all suicides in the United States involve a firearm (CDC, 2019), and while only 4% of nonfirearm suicide attempts are fatal, 91% of firearm-related suicide attempts result in death (Conner et al., 2019). In 79% of youth firearm suicides across five states (Barber et al., 2022), the weapon used belonged to a family member, and in 19%, the firearm belonged to the youth. Universal prevention strategies focusing on safe firearm storage in all homes with youth may be an important and underutilized strategy with potential to reduce youth suicides and other firearm-related injury.

Rates of firearm ownership are substantially higher in rural than suburban and urban regions (Parker et al., 2017). Among adults residing in rural areas, 46% report owning a firearm, compared with 28% of suburban adults and 19% of urban adults (Parker et al., 2017). Among U.S. adult firearm owners, 38% report having a firearm loaded and accessible to them at all times (Parker et al., 2017). The term "firearm localism" was coined to capture differences between "rural and urban gun culture" (Blocher, 2013), with individuals in rural communities describing positive personal experiences of the law-abiding and safe use of firearms for hunting, sport, and protection, while individuals in urban areas tend to associate firearms with crime and violence.

Safe firearm storage practices have been associated with reduced risk of pediatric firearm injury, including suicide and unintentional injury (Grossman et al., 2005), with reductions in risk of 75% to 80%. Firearms in households of youth who sustained firearm-related injuries or deaths were more likely to be stored without a locking mechanism (unlocked), live with ammunition (loaded), or with accessible and unlocked ammunition (Grossman et al., 2005). Previous safe storage interventions for youth have relied largely on health care providers to impart safety education during well-child visits (e.g., Beidas et al., 2019; Grossman et al., 2000) or to screen for suicide risk and counsel parents of high-risk youth to reduce access to lethal means at home (e.g., Sale et al., 2018). Such approaches may not be as feasible in rural areas due to limited access to health care (Health Resources and Services Administration, 2022) and aspects of rural culture that can interfere with help-seeking (e.g., stigma, lack of anonymity, limited insurance coverage, or preference for self-reliance or family-based solutions) (Fontanella et al., 2015; Varia et al., 2014). Despite these challenges, there are also a wealth of protective factors in rural communities (e.g., sense of community, loyalty, resource-sharing, and collaboration) (Rural Youth Suicide Prevention Workgroup, 2008). Strengths-based community interventions may have untapped potential to increase safe storage practices in rural families with children.

Culturally Tailored Approaches to Health Promotion and Decision-Making

Culturally tailored health communications have been shown to lead to deeper processing of content, more accurate consideration of pros and cons, choices that align with personal values, and better decision-making overall (Betsch et al., 2016; Palmer-Wackerly et al., 2014). Acknowledging that firearm-related beliefs may vary between rural communities located in different regions of the United States, this project worked to intentionally draw upon the lived experience of local community members, drawing from community-based participatory research (CBPR) methods (Espinosa & Verney, 2021).

Purpose/Aims

This study details the initial phase of an intervention development project that utilized a university–community partnership (Derwin et al., 2019) influenced by CBPR methods to design a culturally tailored community-based firearm safety prevention strategy for rural families. Focus groups and key informant interviews were conducted to identify messengers, message content, and delivery mechanisms seen as acceptable and impactful with the goal of developing an intervention that was feasible to deliver in a rural area, perceived as respectful to the strengths of rural culture and had the potential to increase safe firearm storage.

METHOD

Community-Based Participatory Approach

The project team included injury prevention researchers based at an academic medical center, a public health

educator from the local health department, and an advisory board of 35 community members, including representatives from the county's suicide prevention coalition, health care, law enforcement, veteran navigators, local business leaders, school personnel, child welfare, juvenile justice, and the region's crisis center. In accordance with a CBPR philosophy, this collaboration reflects a years-long university–community partnership that originated with funding from Substance Abuse and Mental Health Services Administration's (SAMHSA) Garrett Lee Smith State/Tribal Youth Suicide Prevention and Early Intervention Program Grants, with the local community initiating the focus on firearm safety as a key component of suicide prevention in a rural area. The need to culturally tailor firearm-related prevention became clear to public health educators who noticed the benefits of, for example, including a local firearms expert/retired veteran as a credible firearm safety spokesperson at events. Throughout the current project, community partners provided input and advice, co-developing the approach, assisting with participant recruitment, and developing focus group questions. In addition, findings from focus groups and key informant interviews were reviewed by local partners to assist with interpretation and were presented to community partners for feedback.

Recruitment and Description of Participants

Focus group and key informant interview participants (n = 40; 60% male, 40% female) ranged in age from 15 to 72 years (M = 36.9, SD = 18.9). All participants were residents of one rural county located in the midwestern United States. The county is 3,425 square miles and home to approximately 27,000 households with a population density of 37 people/square mile; residents are 94% White, and the median household income is US$56,000/year (U.S. Census Bureau, 2020). The following groups were recruited to participate, given their importance as stakeholders for a firearm safety intervention: (1) middle, high school, and college-age youth; (2) parents and grandparents; (3) individuals with professional firearms experience (e.g., law enforcement, military, hunter safety, or concealed carry permit instructors); (4) firearm owners (e.g., gun club members, hunters, sport shooting enthusiasts); (5) other community members to include government officials, school staff, and health care providers; and (6) individuals with lived experience of firearm injury. Individuals were recruited with the help of the community advisory board and local public health educator. Table 1 describes participant demographics and firearm ownership.

TABLE 1
Participant Demographics

Demographics	n *(%)*
Number of participants, n	40
Mean age, M (SD)	36.9 (18.9)
Gender	
Female	16 (40)
Male	24 (60)
Race/ethnicity	
White	33 (82.5)
Black	1 (2.5)
Native American	3 (7.5)
Asian	1 (2.5)
Other	2 (5)
Education	
Some high school	8 (20)
High school graduate	5 (12.5)
Some college/technical school	10 (25)
College graduate	10 (25)
Graduate or professional training	7 (17.5)
Public assistance	
Yes	5 (12.5)
No	35 (87.5)
Firearm ownership and storage[a]	
Firearm ownership	35 (88)
Firearm in household	36 (90)
Unlocked firearm in the home	24 (60)
Loaded firearm in the home	17 (42.5)
Major reason for owning a firearm[a]	
Hunting	34 (85)
Sport shooting	25 (63)
Protection	24 (60)
Collecting	6 (15)
Work	4 (10)

[a]Participants were able to select as many options as applicable.

Focus Group/Interview Procedures

The local public health educator facilitated all interviews in person in 2019 (prior to the COVID-19 pandemic). Focus groups (n = 6) ranged in size from three to eight participants (M = 5.8) and were conducted in community locations such as libraries, schools, a sportsmen's club, and the local health department. Key informant interviews (n = 6) were conducted individually, primarily to capture input from visible community leaders who may have been reluctant to express their thoughts in a

TABLE 2
Focus Group and Key Informant Interview Questions

Theme	*Questions*
Community	Tell us about the culture around firearms in your community. What role do they play in people's lives? What are the main reasons people own firearms in this community? How do people feel about gun ownership here? What does firearm safety mean to you?
Safe storage	How are firearms commonly stored in this community? What are examples of safe and unsafe storage that you see in your community? What are the barriers to safe storage in this community? How do storage strategies differ depending on the type of firearms, the purpose they serve, and the location of use (e.g., deer camp vs. home)?
Existing safety interventions	What have been some of the efforts in your community to promote firearm safety? Who was involved with this, perhaps delivering the training or message? What type of information was shared? How did people in the community respond?
Family rules	What types of rules do families with children have about firearm use, safety, and storage? How does this vary at home versus at deer camp?
Messenger preferences	Who may be the right people/the best organizations to deliver messages about firearm safety in this community? What role might a preferred messenger have in the community (e.g., health care, law enforcement, community elder, schoolteacher)? What qualities would this person/organization need to have to make their message credible? What qualities would make you feel uncomfortable?
Message content	What should be included in the message? What should the message say? What shouldn't it say? What are your thoughts about presenting data about firearm injuries/death as part of a safety message? What are your reactions to these existing materials? What should we ask people to do in this message? What is a reasonable/feasible/acceptable ask that would increase safety?
Cultural tailoring	What are your thoughts about including a focus on community values in the message? Do visuals matter to you? What about testimonials? Decision aids?
Message delivery strategies/preferences	What is the best way to deliver a firearm safety message in a rural community? What is the right delivery mechanism for this community? What's the best way to get the message out to the community?

group setting or those for whom scheduling was difficult. Participants provided informed consent as required by the Institutional Review Board and were paid US$40 for their time. The facilitator reviewed project goals and set expectations for privacy and conduct during discussions, which were audiotaped and later transcribed.

Focus group/interview questions were standardized and identical across the group versus individual formats. Table 2 depicts the questions used to guide conversations, with topics focused on community norms and values regarding firearms, reactions to previous safety efforts, and intervention development. Participants were provided hard copies of existing firearm safety educational materials for their review and feedback (e.g., National Shooting Sports Foundation, American Academy of Pediatrics, CDC-funded Injury

Prevention Center infographics). At the conclusion of each session, participants completed a brief survey to collect demographic characteristics, firearm ownership and storage practices (Parker et al., 2017; Sokol et al., 2021), and preferences regarding firearm safety messengers, messages, and delivery mechanisms.

Coding Procedures

A team of four individuals (C.E.F., L.A.B., M.E., J.L.V.) engaged in qualitative data analysis, with two coders (M.E. and J.L.V.) and two supervisors (C.E.F. and L.A.B.). During a training period, the coding team (three of whom were not involved in designing or conducting focus groups) familiarized themselves with project goals, transcripts, and audio recordings. An open coding technique was used to generate themes across qualitative focus groups and key informant interview questions (Strauss & Corbin, 1998). Using questions as thematic anchors, operational definitions for each theme and subthemes were created using three randomly selected transcripts. Any uncategorized content was reviewed as a group for agreement. The coding system was iteratively improved by consensus during weekly meetings. After the codebook was finalized, one coder (M.E.) coded all transcripts with 25% of transcripts double-coded (by J.L.V.) to achieve intercoder consistency. Any discrepancies were resolved by consensus among the full coding team. The following strategies for rigor (Padgett, 2016) were included in the study: (1) triangulation (i.e., analytic triangulation with more than one coder), (2) use of an audit trail, and (3) member checking with participants (i.e., with community advisory board members).

RESULTS

Tables 3 and 4 summarize the themes, subthemes, sample quotations, and extent to which subthemes were mentioned during the six focus groups and six key informant interviews. Qualitative findings are organized by theme, with quotations labeled as derived from a Focus Group or Key Informant Interview.

Community Norms, Values, and Beliefs About Firearms

Firearms were described as a way of life, both common and nonthreatening. One participant stated,

> Everyone had-had guns and, like, during hunting season, pretty much half the school was gone . . . 'cause they were all out hunting, and so everybody had 'em. Everybody used 'em . . . .we're all just shootin' guns out there, and nobody cared 'cause it happens all the time. Like, nobody would call the cops if they hear a gunshot or anything . . . for me, it's weird if you don't own a gun. (Focus group participant)

Participants also associated firearms with family, sharing memories of receiving firearms as gifts from parents and grandparents, and learning to use firearms safely as part of multigenerational family outings:

> I think most kids—young boys, uh, like, myself or whatever, grow up and, kind of like, a rite of passage and everybody goes and sits in the wood . . . . I started out hunting with my dad when I was little. (Key informant interview)

Reasons for Ownership

Hunting was the most frequently reported reason for owning a firearm, followed by protection, sport shooting, and collecting. In addition to describing hunting as part of their culture, participants also spoke about the need to protect themselves and their pets from wild animals while hiking or fishing. "There are a lot of predators, and you may not have a big enough gun for a bear, but you can scare a predator off with a gun you do carry" (Key informant). Lengthy response times for law enforcement in rural areas were also noted. One participant stated, "Home defense too, I mean, in a rural setting, you dial 9-11, if you have phone signal and how long is it going to take?" (Focus group). Participants referred to firearms used for home protection as "nightstand guns," distinguishing them from firearms carried on their person with a concealed carry permit.

Safety

With respect to safety, the most frequently mentioned subthemes included (1) "hands-on" training and practice, (2) safe handling as an owner's responsibility, and (3) parents' role in youth safety. Safe storage was rarely mentioned (unprompted by the interviewer) as a component of safety. One participant stated,

> If you're gonna make that choice to, legally, to carry that you should be practicing from time to time . . . you know, go to the range or join a club or, I mean, should just practice . . . it's a responsibility, you're gonna have a gun, then you have to be responsible with it and you have to know how to use it. (Key informant)

Across participants, the "dos and don'ts" of safe firearm handling were emphasized, including "Don't

TABLE 3
Focus Group Results

Theme	*Subtheme*	*Description*	*Sample quotes*	n
Community norms, values, and beliefs	Firearms are: A Way of Life Up Here/Common/ Everyone Has Them/ Normal/Not Scary or Threatening	Firearms are common to residents, described as part of the culture, and not seen as out of the ordinary or threatening	"It's expected to have firearms in your home. Like anywhere you go . . . I think every house I've been to has at least one." "Firearms are a part of this community, only because in the Upper Peninsula, hunting is a very big part of the culture."	30
	A Part of my Childhood/Passed Down Through Generations/A Rite of Passage/Associated with Family	Growing up with firearms and having received firearms as gifts, activities with guns were rites of passage, memories of firearm-related family experiences	"You're raised around them (guns)." "My boys were 5 and 8 when I started taking them in the deer blind with me."	25
	Examples of Conflicting Beliefs in the Community/ Controversy	Conflicting beliefs and different views on guns in the community	"You get your two extremes on both ends and there's people who appreciate having them . . . and there's people who think that they're the devil's stick."	5
	Concealed Carry (CPLs) Common	Concealed carry weapons and permits are common/ not unusual in the community	"It becomes something" "oh you're packing too, so am I."	5
	Community Bonds/ Social Connections Around Guns	Gun-related activities create a community/social ties (beyond the family)	"Years ago . . . it was common on a Tuesday night that we could have 30, 40 people just to shoot trap . . . people just love to come and be able to do that."	3
	Firearms Are a Tool/ Functional	Guns are a tool, like a hammer, and used to do something functional	"Like having a hammer in a toolbox"	3
	Belief in Second Amendment Freedoms	Exercising second amendment freedom is a major reason for having and using a firearm	"I think it's a very pro, like, Second Amendment area . . . I think it's, you know, per—as far as personal freedoms or the right to bear arms type of thing."	3
Reasons for ownership or activities	Hunting	Firearms are used to hunt	"Hunting up here is the basic concept of why people own weapons."	31

(continued)

TABLE 3 (CONTINUED)

Theme	*Subtheme*	*Description*	*Sample quotes*	n
	Protection	Firearms are used for protection from animals and people, and to increase feelings of safety	"More and more people now are carrying for protection." "I've seen two or three coyotes walk up on the trail that I'm on, and I'll be like, all right, well, the 22's there for a purpose . . . and it's always on my hip, so when I go fishing or fly fishing or whatever, you know, I'd see things along the river . . . bears."	21
	Shooting for Fun/ Entertainment/Sport Shooting/Going to Gun Ranges	Firearms are used as a form of entertainment/sport	"We had BB guns just for fun- shoot cans in the back yard."	9
	Collectors	People collect firearms and have firearm collections	"There's also another group of gun owners, they are collectors. They just like all the different models."	6
Firearm safety	Importance of Training, Practice, Hunter Safety Classes	One aspect of safety is getting trained. This may include hunter safety classes and other types of training/practice used to keep people safe around firearms	"So firearm safety to me means if you're gonna carry a gun or be around guns, you should be . . . trained to use those guns."	30
	Parent Responsibility: Parents Give Permission to Touch Firearms/Parents Teach Kids About Safety	Parents are responsible for teaching kids about firearm safety, keeping guns away from kids, and giving permission to kids to touch and use firearms	"There are so many people out there that when you hear of a child that's been shot, a lot of it has been because the parents weren't responsible enough to make sure they were secure, going back before that they weren't responsible enough to teach those kids about the firearms."	29
	Safety as a Responsibility of Ownership/Be in Control of Your Firearm/Handle It Safely/Knowing and Following the Dos and Don'ts of Hunter Safety	Safety means being responsible and in control of your gun and handling it in a safe manner. This may include specific rules that people follow/everyone knows	"Don't point a gun at anyone, don't look down the gun barrel, treat every gun like it is loaded."	25

(continued)

TABLE 3 (CONTINUED)

Theme	*Subtheme*	*Description*	*Sample quotes*	n
	Testimonials About Accidents	Stories and shared experiences about firearm accidents	"My dad told us stories of kids where accidents happened."	15
	Selective About Who I Hunt With	Safety includes only having certain individuals whom you trust at hunting camp	"I only hunt with people I know how they handle their guns."	10
	Concerns About Safety/ Dangerous Situations	A participant shares examples of situations that they identify as concerning and unsafe	"Lots of people leave guns laying around all over the place."	8
	Respect for Your Firearm	Safety means having respect for the power of the firearm. Must say the word "respect"	"Have respect for your firearm"	7
	Role of Alcohol	Safety includes setting rules about alcohol	"We don't let people drink and use guns at camp"	7
	Defining Storage as Safety	Participants bring up storage as part of gun safety unprompted from the interviewer	"Storage is a part of safety."	5
Storage	Common Storage	Examples of common storage methods observed in the community	"Tall gun lockers"	27
	Stored Locked and Secured	Firearms are stored securely and locked to reduce access. This includes locking up the firearm and/or ammunition, ammunition stored separately and locked; includes safes and all types of locks	"Dad always kept guns in the safe."	20
	Examples of Unsafe Storage	Storage techniques that participants state or imply they know are unsafe	"We're guilty we don't lock ours up."	7
Barriers	Familiarity/Belief It Won't Happen To Me/ Lack of Awareness/ Habit	Do not store guns securely because people believe nothing bad will happen; they never have before; don't think about it; don't know the risks, or they do not care	"It's so commonplace to them that they wouldn't think, you know, like if somebody's visiting them that has small children, they wouldn't even think that it wouldn't be normal in their child—in that child's home."	12

(continued)

TABLE 3 (CONTINUED)

Theme	*Subtheme*	*Description*	*Sample quotes*	n
	Need for Quick Access for Hunting	Do not store guns securely because guns have to be quickly accessed for hunting	"We live in a hunting setting; my grandma would shoot squirrels because they get in the house; she always had a 22 sitting in the kitchen."	9
	Need for Quick Access for Protection	Do not store guns securely because guns have to be quickly accessed for protection	"Need it quickly or someone could get a shot off"	7
	Cost	Do not store guns securely because storage options are not affordable	"Gun cabinets are expensive."	6
	Need for Quick Access Unspecified/Takes Too Long to Store Safely	Do not store guns securely because of need for quick access	"Need to quickly access"	3
	Space It Takes Up	Do not store guns securely because of limited space	"If you don't have the space or—I mean if there's space under the bed."	2

Note. CPL = Concealed Pistol License.

point it [a gun] at anything you don't want to shoot" (Focus group); "Treat every weapon as if it's loaded" (Key informant); "That safety remains on until you are ready to shoot (Focus group)"; "Don't bring it into the house loaded" (Focus group). Some participants placed blame on parents for youth injuries, focusing on parents' responsibility to control access to firearms, teach kids about the danger of firearms, and ensure that kids will be "in trouble" for touching firearms without permission. A teen stated, "If I was even to go shooting with myself or my friends, I'd have to go to him [Dad]—go to him, tell him to unlock the safe" (Focus group).

Storage Practices/Barriers

Participants, especially those whose occupations involved firearms (e.g., hunter's safety instructors, law enforcement), described firearms stored in safes, gun cabinets, or locked rooms separate from ammunition. Others mentioned the practice of locking most guns but making exceptions for a "nightstand gun" used for protection or a rifle required for hunting or protecting against animals. Other common practices included storing between the mattress and box spring, in a gun case under the bed, in a closet, behind furniture, in dresser drawers, in a vehicle, and displayed in a gun rack. Multiple participants indicated that their storage practices could be improved. For example, one participant stated, "My house is probably one that's . . . probably not safe enough . . . . we don't have a safe, but, you know, we hide 'em. Um, but I'm sure they wouldn't be unaccessible completely to the kids . . . we're probably not as safe as we could be" (Key informant).

When asked about barriers to storing under lock and key, three subthemes involved the need for quick access related to protection, hunting, or the sense that secure storage "takes too long." Another prominent subtheme was the notion of habit, familiarity, and the sense that nothing could go wrong:

> People . . . get comfortable with firearms, they get lackadaisical with guns . . . . They'll keep—they'll leave guns around, or they'll think, my kid won't grab . . . or somebody . . . that . . . won't happen to me, or my—they know better . . . And they're, like, "Oh, I . . . taught my kids. They know better." And I'm like, "Man, you say that until somethin' happens." (Key informant).

TABLE 4
Intervention Development Focus Group Results

Theme	*Sub-theme*	*Description*	*Sample quotes*	n
Previous safe storage efforts	Access to Gun Locks	Participants report being able to easily access gun locks from different sources/new guns come with gun locks	"Sheriff's office always has gun locks you can pick up for free."	12
	Hunter's Safety/Firearm Safety Classes	Firearms safety has been taught in different safety classes such as hunter's safety or CPL classes, Eddie the Eagle curriculum, or firearm safety in health class or as part of shooting sports team safety training	"Hunter's safety has been a place to learn safety."	11
	Few Other Interventions Exist Besides Hunter's Safety	There are not many other interventions about firearm safety or messaging around safety besides hunter's safety	"None that I can think of"	4
Messengers	From/Known in the Community	People who are from or well-known within the community would be good messengers on firearm safety	"People who you know are safe and know what they are talking about"	15
	Knowledgeable About Firearms/have experience with Firearms	People who have a lot of knowledge about firearms and are known to have or certified to have that knowledge would make good messengers about firearm safety	"A person's knowledge about firearms is most important"	14
	Law Enforcement	Individuals in law enforcement would be good messengers on firearm safety	"Law enforcement have experience."	13
	Sportsmen's Clubs/ Hunting Clubs	Local Sportsmen's club or national or state firearms association members would be good messengers on firearm safety	"The clubs like this one have a reputation for teaching and safety"	7
	DNR	Individuals who work for the Department of Natural Resources (DNR) would be good messengers on firearm safety	"Game wardens teach hunter's safety."	5
	Dads	Dads would be good messengers on firearm safety	"My dad taught me, and I taught my kids."	3
	Not Pediatricians	Pediatricians would not be good messengers on firearm safety	"If they asked me about my guns, I would say it isn't their business."	3

(continued)

TABLE 4 (CONTINUED)

Theme	*Sub-theme*	*Description*	*Sample quotes*	n
	Not Educators	Educators and school staff would not be good messengers on firearm safety	"Schools lean one way in this."	3
	Health Department	The health department (home visiting nurses, health educators) would be good messengers on firearm safety	"Health department gives out a lot of information."	2
Message content	Tailored for Rural Areas/Local Stats	Content should be tailored to rural areas; any statistics should be as local as possible or reflect rural regions	"Can you get local numbers for this?"	29
	Removing Guns From Homes Is Not the Right Message Up Here/ Message Can't Be About Gun Control	Message content cannot have wording about removing guns from the home, not having guns in the home, or wording about gun control or the gun control debate	"People won't read something saying guns shouldn't be in the home."	23
	Hearing a Story Personally and Directly/Testimonials	Firearm safety messaging should be delivered using personal stories and testimonials	"Parents and instructors share stories in hunter's safety, and it makes it real to the kids."	23
	Include Resources/ Resources Are Good/ Tips Are Helpful	Resources and Tips about gun safety and safe storage are helpful to include pros and cons of different storage methods depending on your reasons for ownership, information about how to use gun locks properly, where to buy, etc.	"The resources on where to buy are helpful."	21
	Avoid Judgmental Language and Tone	Message content should not have wording that is judgmental or seem against guns/gun ownership. People feel judged for having a gun or like they are not good parents for having guns	"With wording about your home being unsafe because of guns, no one would listen because of the judgement."	16
	Solution-Focused	The message content should be focused on solutions and not on problems. Using scare tactics is presenting a problem without offering a solution	"It needs to be solution focused not problem focused."	16
	Statistics Are Not Believable Here	Statistics and numbers in message content are not useful and people do not believe them. Distrust of statistics and data in general	"National statistics are not applicable up here."	15

(continued)

TABLE 4 (CONTINUED)

Theme	*Sub-theme*	*Description*	*Sample quotes*	n
	No Link Between Guns and Suicide/Guns Don't Kill People, People Do/Suicide Isn't Preventable	Participant statements that guns do not influence suicide rates or that people with suicidal thoughts will not be impacted by means of restriction	"If someone is going to do it (kill themselves) they'll do it no matter if they have a gun or not."	12
	Safety Is the Parent's/ Owner's Responsibility	The message content should show that gun safety is the parent's responsibility, and it is on the parent to keep kids safe around guns	"Parents have to teach about safety and practice it."	10
Delivery mechanism	Parents and Kids Involved Together	The way that firearm safety messages are delivered should include parents and kids together	"Kids learn from their parents."	14
	Community Conversations	Having conversations with the community about guns and gun safety	"Something similar to this (focus group)"	13
	Through Schools	Schools should provide firearm safety as part of the curriculum	"Get it back in the schools"	13
	Social Media	Facebook, Instagram, and other platforms could be a delivery mechanism in a rural area	"Facebook"	9
	Suggestions for Expansion/Tailoring of Hunter Safety/CPL-Type Classes	Different types of firearm classes or specific types of classes to teach safety and training	"But if you made all, just all-female classes, you get far more females that attend because they have the questions, but they're afraid to ask (in a regular class)"	7
	PSA/Awareness Messaging	Public service announcements such as billboards, radio ads, and videos	"I think billboards are still appropriate."	7
	State-Mandated Safety Class for Youth/Role of Policy	The state should require a firearm safety class or training for youth and policy should play a role in requiring some type of firearm safety training/education for youth	"Should have a state mandated class on firearm safety for 5th or 6th graders or even a little younger."	5
	In-Person/Allowing Hands on Practice	Some type of hands-on practice is important	"Presentation with a hands-on component"	3

Note. CPL = Concealed Pistol License.

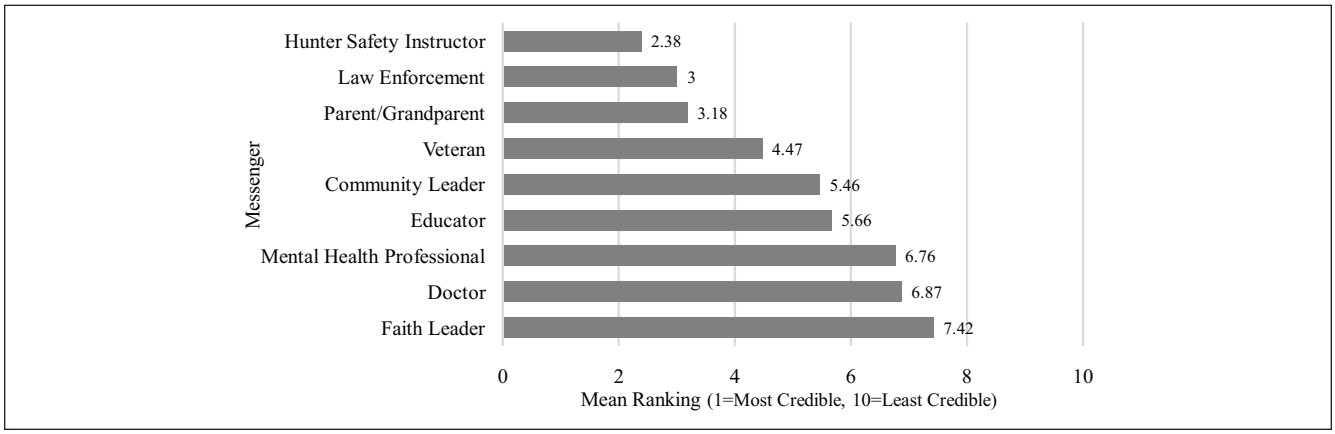

FIGURE 1 Preferences for Intervention Messengers and Content Credibility Rankings of Safety Messengers

Intervention Development

Participants agreed that existing community efforts to promote firearm safety were limited. The most credible/preferred messengers for firearm safety were people known and respected in the community, individuals knowledgeable or experienced with firearms, and law enforcement. "If someone seems to know what they're talking about, I'd listen to 'em, anyone. . . .You obviously want a hunter, rather than some dude that sits in an office" (focus group). Pediatricians and educators were mentioned as nonpreferred messengers by several participants. Figure 1 presents survey ranking results (collected at the conclusion of interviews) of the most credible firearm safe storage messengers.

To facilitate conversation about the content of a safety message, participants were shown existing firearm safety educational materials. One common response included the desire for materials to be tailored for the rural community. For example, in response to the national statistic that "Over 41,000 children and youth are injured or killed by firearms each year" (CDC, 2014), many sought clarifications about how and where data were obtained. One participant stated, "you know, if you take at the look at the vast majority of those, they're-they're gonna be between the 17 to 21 range—and it's gonna be gang-related" (Key informant). A second common subtheme was that asking individuals to remove guns from the home or implying that homes were safer without guns would not be acceptable in a safety message. One key informant stated,

> When they see the comment "Remove guns and ammunition from your house," like, no guns, they're gonna be completely, like, turned off from it . . . and think, "okay, well, I'm not listening to them . . . you know," "I'm pro guns, and um, people aren't gonna tell me that I can't have a gun." . . . . they're not even gonna wanna read it.

Multiple participants reacted to the wording that "the safest home for children is one without a gun" (American Academy of Pediatrics, 2019) that they perceived as judgmental, offensive, or implying that firearm owners did not take their children's safety seriously.

A majority of participants also expressed a preference for personal testimonials in a safety message and for "how to" tips and resources (i.e., where to buy safe storage products, the pros and cons of each storage method related to the purpose of the weapon, etc.). Several participants objected to linking firearms to increased risk of suicide. One participant stated, "It's that whole correla-correlation is not causation. So like, just because there was a gun there, and there was a suicide there, does not mean they had anything to do with each other" (Focus group), with others repeating their belief that someone who had decided to end their life would find a way regardless of the presence of a firearm. Figure 2 presents survey rankings of preferred safe firearm storage message content.

When asked about the best strategy to deliver a safe firearm storage intervention for rural families with children, the most popular responses involved (1) the need to involve parents and youth together, (2) a desire to reintegrate hunter safety curriculum into schools, and (3) an interest in generating community conversations "like this focus group" to increase awareness and provide tailored strategies.

DISCUSSION

Despite evidence that rural youth are at elevated risk of firearm-related mortality (Goldstick et al., 2021), that

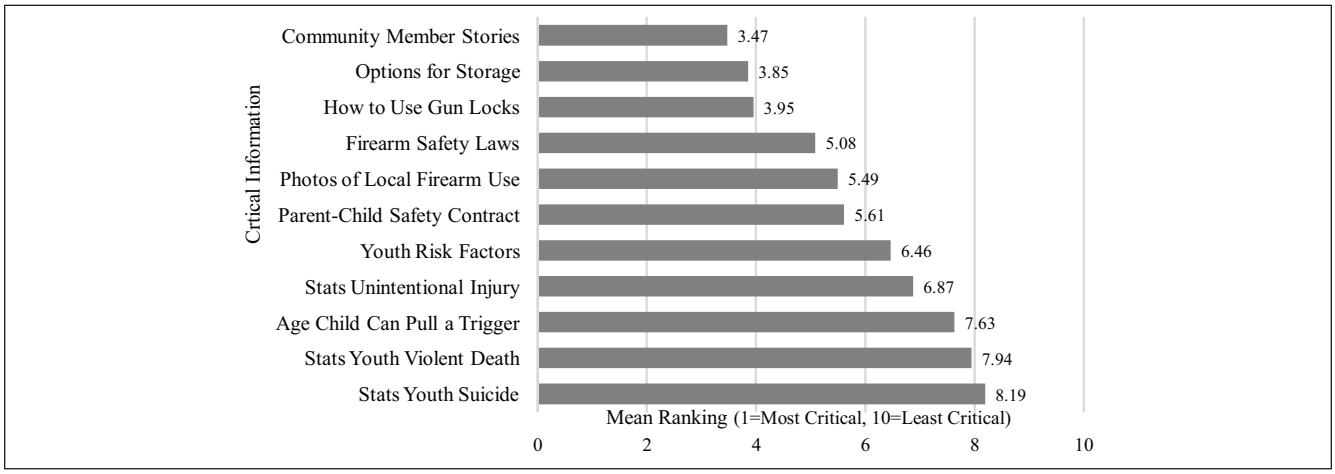

FIGURE 2 Critical Information to Include in Firearm Safety Message

firearm ownership rates are higher in rural areas relative to other regions (Parker et al., 2017), and that safe storage is a promising prevention strategy (Grossman et al., 2005), little is known about how to develop and implement culturally tailored safe storage interventions in rural communities (Derwin et al., 2019; Varia et al., 2014). In this initial phase of intervention development, focus groups and key informant interviews were used to collect qualitative data and identify emerging themes of acceptable and potentially impactful safe storage messengers, message content, and delivery mechanisms.

Implications for Practice, Policy, and Research

Consistent with the notion of "firearm localism" (Blocher, 2013) and with nationally representative surveys (Parker et al., 2017), participants in this study reported positive family experiences with firearms, saw most firearm owners as responsible and law-abiding, and did not view firearms as threatening. Prevention messaging that implied that firearms were unsafe did not "land" with participants and contributed to a sense that such messages did not apply to their community or were developed by individuals who were inexperienced with firearms or who had an "agenda." Many participants expressed strong negative reactions to existing educational materials that they perceived as judgmental or insulting to rural culture, consistent with survey data indicating that rural residents feel "misunderstood or looked down on" (Parker et al., 2018).

Participants expressed pride in teaching children about firearm safety through hands-on experiences (e.g., going to deer camp [i.e., traditional family hunting locations] with grandparents and parents, the "do's and don'ts" of safe handling, hunter safety training, and strict rules about supervision of and permission to access firearms). It was rare for participants to conceptualize safe storage as a component of firearm safety, with community definitions of safety focused primarily on safe handling rather than storage. This is consistent with a recent qualitative study focused on firearm-owning families in the southern United States (Aitken et al., 2020) in which many parents felt that the most powerful safety intervention was teaching children respect for and safe handling of the firearm (don't touch, assume it's loaded), rather than to store firearms under lock and key. The sense that growing up with guns would protect youth from firearm injury or death was pervasive among participants. Unfortunately, with firearm-related deaths rising in rural areas (CDC, 2019), this assumption is not supported. Many participants expressed doubts that national firearm mortality statistics included rural youth experienced with firearms. A strong recommendation would be to ensure that any statistics used in safety messages be locally derived. Acknowledging community pride in youth safety education and responsible ownership may be an important engagement strategy and is consistent with preferences for messengers who are known and respected in the community for their firearm expertise. This recommendation conflicts with common safety messengers nationally (i.e., pediatricians and mental health professionals, for example, Beidas et al., 2019).

The use of a harm reduction (Single, 1995) philosophy to move individuals toward even modest improvements may be an important missing piece in current safe storage messaging, which is often perceived as "all-or-nothing" in terms of what is "safe" (guns locked in

a safe and separated from locked ammunition). The acceptability of interventions may be improved by consideration of the owner's perceived need for protection along with a discussion of the pros and cons of various "safer" options. Two thirds of respondents in a nationally representative survey of firearm owners cited protection as a reason for ownership (Parker et al., 2017), suggesting that harm reduction concepts of acceptance, nonjudgment, and practicality may be of benefit outside of rural communities as well. Our participants recommended solution-focused approaches that considered storage options tailored for the type and purpose of the firearm. This is consistent with "decision aid" interventions that use motivational interviewing strategies to clarify firearm owners' values and needs and provide information to inform decision-making (Betz et al., 2018).

Limitations

This study has several limitations. First, findings emerged from interviews with a small sample of 40 participants recruited from one rural midwestern county. Although many participants identified as male, White, and non-Hispanic/Latinx, participants were representative of the region studied and findings were consistent with a sample of firearm owners from a southern region of the United States (Aitken et al., 2020). Second, as all participants were open to firearm-related questions, qualitative data may differ for individuals who are less willing to discuss these topics, resulting in potential self-selection bias. Finally, data were cross-sectional and collected between July and October 2019; thus, patterns of attitudes and beliefs were not examined over time, and we have no data on how attitudes might have been affected by the COVID-19 pandemic.

CONCLUSION

Safe firearm storage practices have the potential to reduce child and adolescent firearm-related injury and deaths, but it is critical that public health messages be aligned with community norms and values. Our findings suggest that a safe storage prevention strategy for rural families should be delivered by credible messengers with firearm expertise using messages that honor local traditions, involve flexible storage options that acknowledge reasons for firearm ownership, and link any statistical data provided to the local community.

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